

WP19

# Quality Attributes

**Design of Software Architectures**

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# Stakeholder statement

**VS**

# system requirement?

# What could go wrong?

- The product must be user friendly and easy to use
- Response time should be less than 1 second
- The system should be always available
- It shall work just like the previous system, but on a new platform
- The system must never fail, and if it does, should produce a report
- The product should be accessible
- The communication protocol cannot change
- The system has to be robust
- You must support many parallel users
- The product must fit all users' individual needs

# Everyone wants quality

## Quality is subjective

# Quality attributes

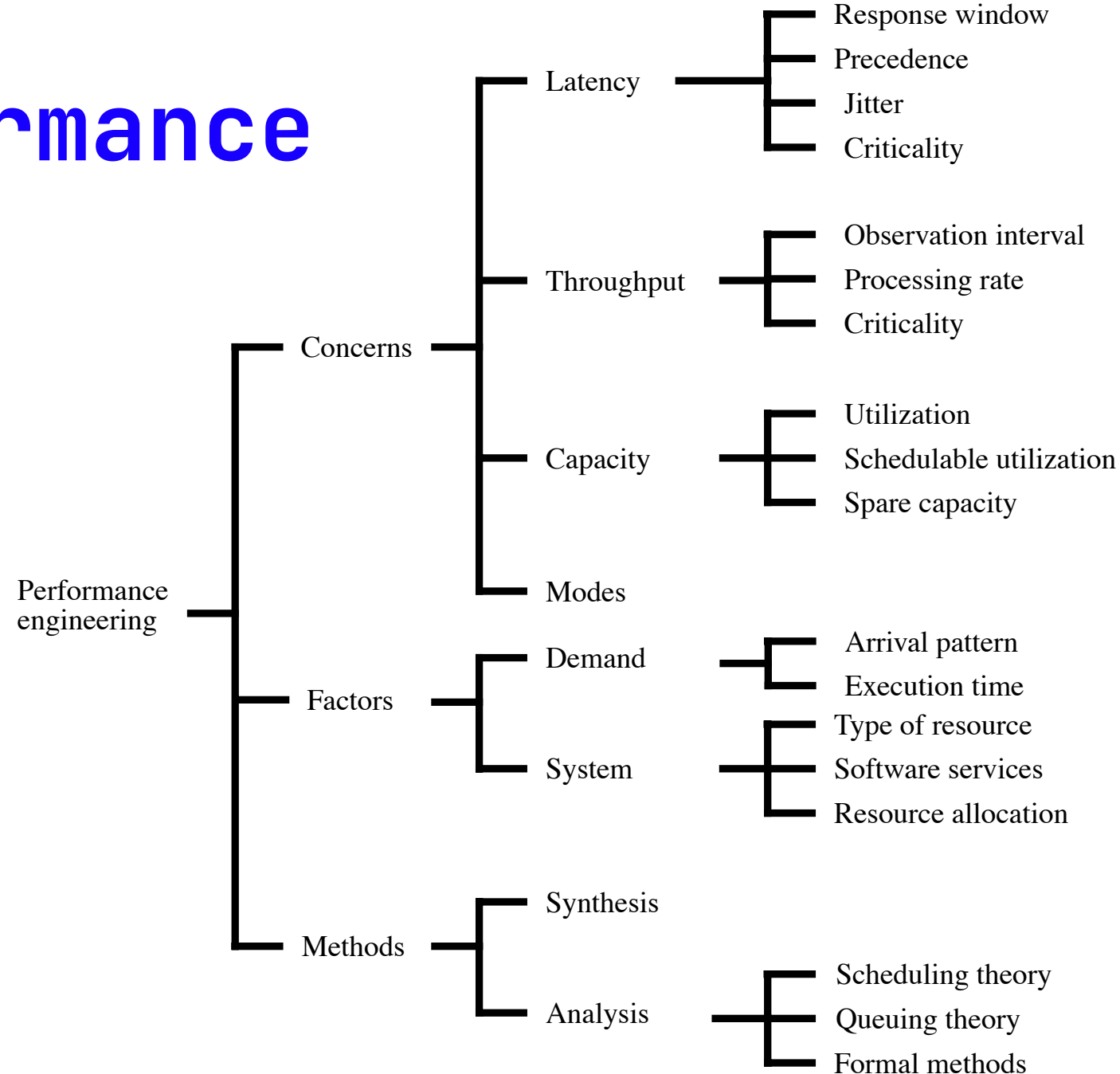
- **Red flags**

- speed
- ease
- performance
- bug-free
- usability
- . . .

- **Green flags**

- configure
- recover
- analyse
- replace
- maintain
- . . .

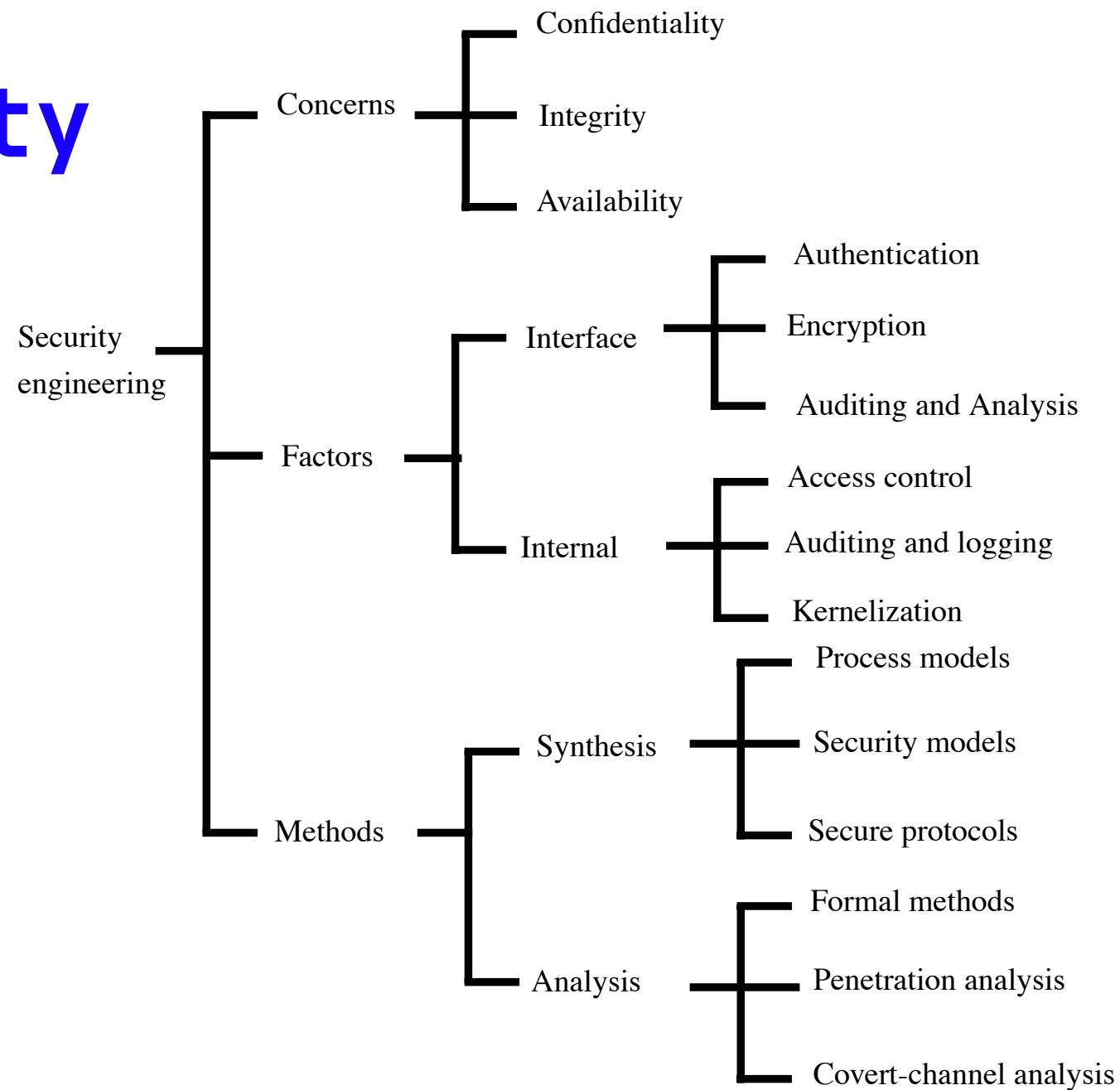
# Performance



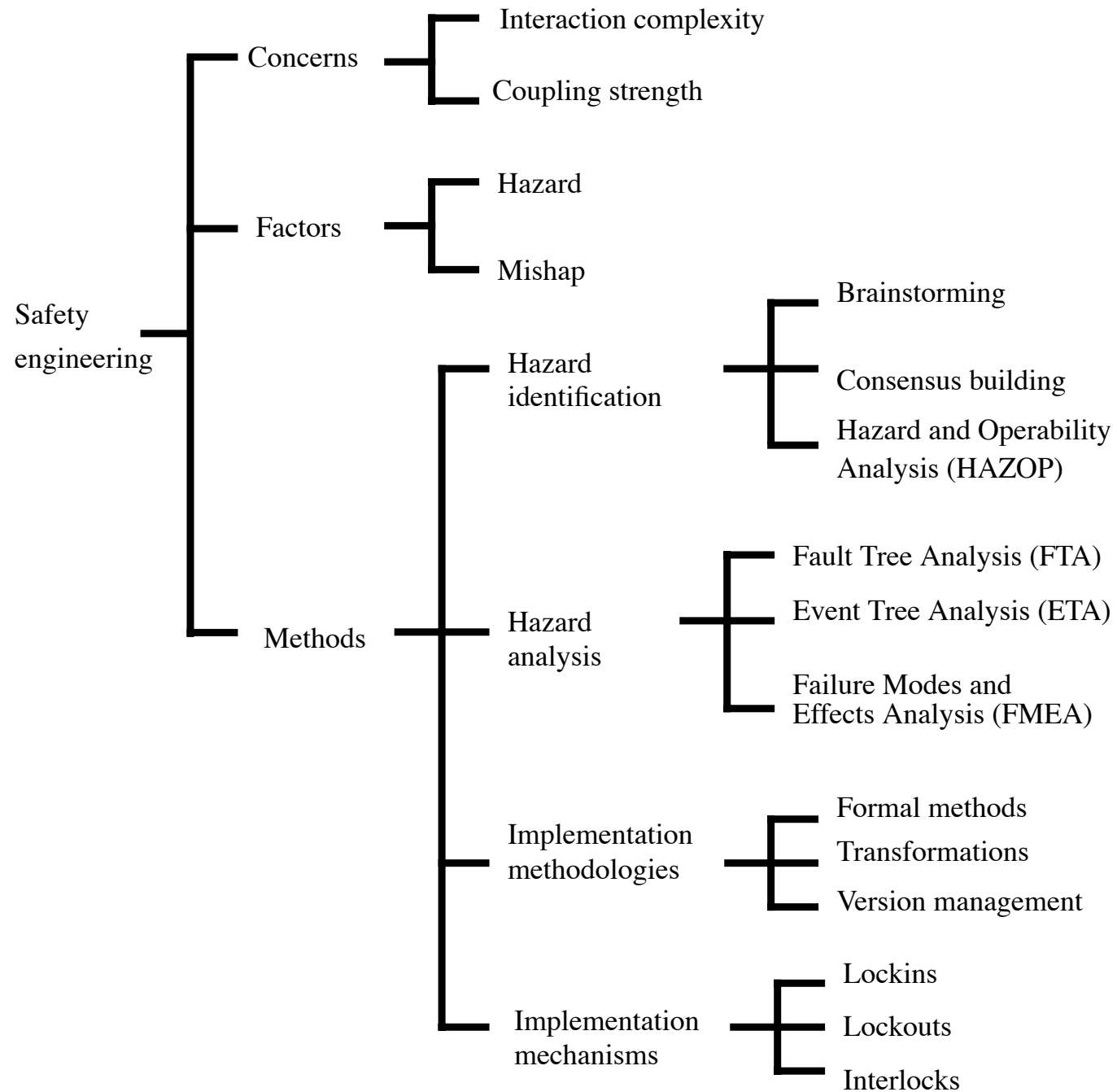
# Dependability



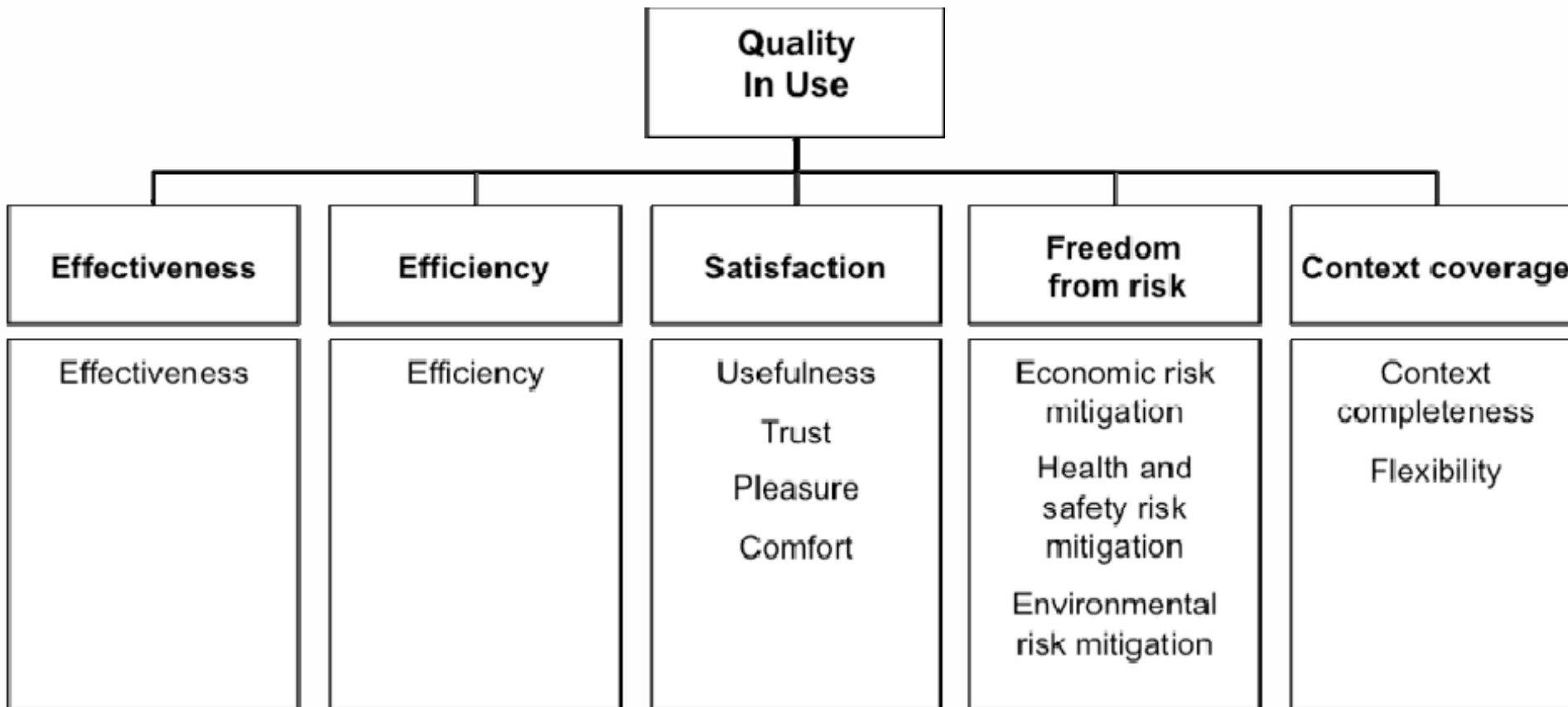
# Security



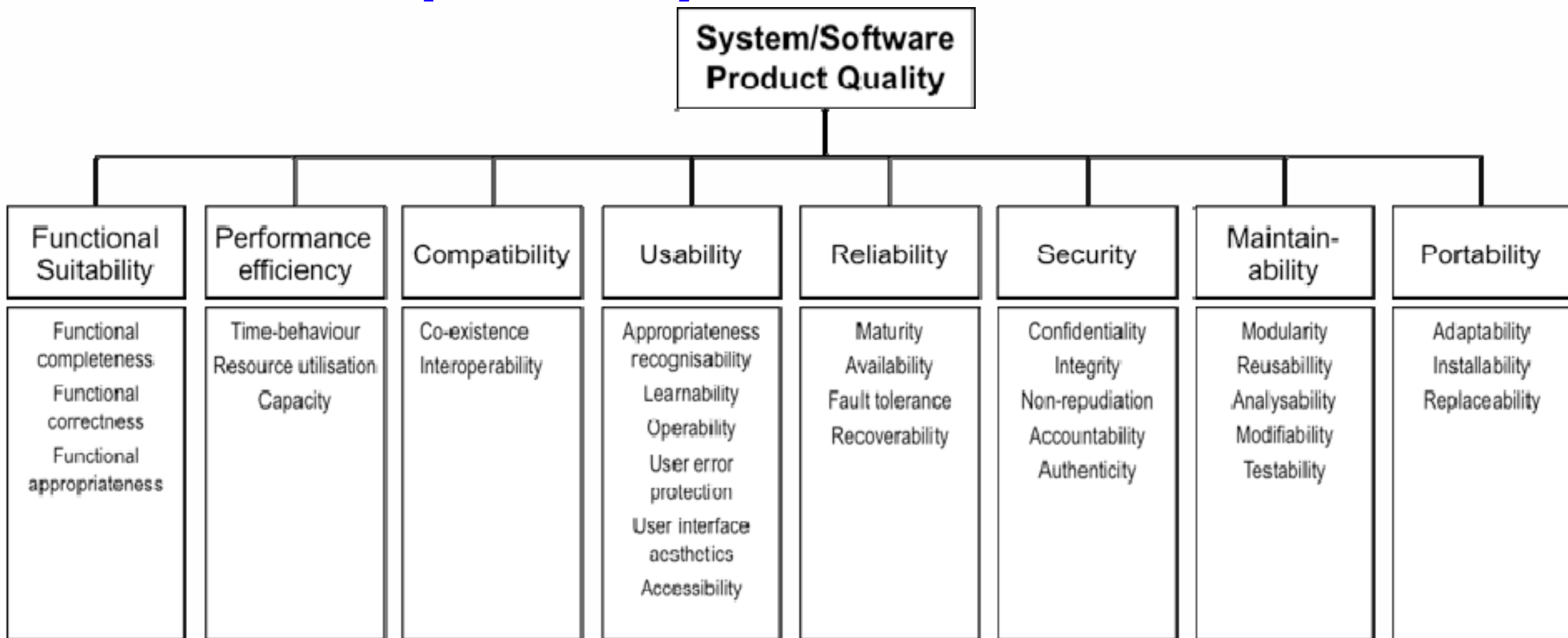
# Safety



# Quality in use



# Product quality



# ISO/IEC 25010:2011(E)

## • Helps

- great starting point
- QAs are well defined
- metrics are helpful
- arch input
  - e.g. quantification  
⇒ trade-offs
- reusable design

## • Does not suffice

- SE bias
- domain may need extension
- too blind/rigid on metrics
- does not guarantee completeness
- does not ensure consistency

# Quality attributes

- Find QAs from stakeholder interaction with the system
  - name the interaction
- Read **ISO 25010**:
  - To save time: start with §2; Read §§3.1–3.6
  - Scan through §4
  - Select applicable quality attributes and metrics
  - Write requirements for your case